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EXAMINER	
ORTIZ CRIADO, JORGE L	
ART UNIT	**PAPER NUMBER**
2627	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/903,752	KAWANO, NORIYUKI	
	Examiner	Art Unit	
	Jorge L. Ortiz-Criado	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,22-31,42 and 49-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,22-31,42 and 49-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the Appeal Brief filed on 09/05/2006. After consideration of the remarks made, the previous office action mailed 03/02/2006 is withdrawn and herby vacated and replaced with this office action. Applicant's amendment filed 06/23/2005 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL.

Response to Arguments

Applicant's arguments with respect to claims 1-7, 22-31, 42 and 49-56 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-7, 22-31, 42 and 49-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izuka U.S. Patent No. 5,666,235 in view of Ikegame Japanese Publication. No. 10-116431.

Regarding claim 1, Izuka discloses an objective lens drive apparatus configured to be used in an optical pickup (See Abstract), comprising:

a magnetic circuit comprising a first and second magnets (47, 48) separated from one another by a gap; (See Figs. 9,10); and

a coil unit (28) comprising a "laminate" structure including a focus coil (31), a tracking coil (34), the "laminate" structure is disposed within the gap, and

an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens is disposed outside of the gap in which the laminate structure is dispose (see col. 11, line 41 to col. 12, line 43).

Izuka fails to disclose a tilt coil.

However this feature is well known in the art as evidenced by Ikegame, which discloses an objective lens drive apparatus configured to be used in an optical pickup (See Abstract), comprising: a magnetic circuit comprising a first and second magnets separated from one another by a gap; (See Detailed description [0033]; Figs. 11, 12, ref# 8,9); and a coil unit comprising a "laminate" structure (See detailed description [0028]; Figs. 12 ref# 23,24) including a focus coil (See detailed description [0028]; ref # 3), a tracking coil (See detailed description [0028]; Figs. 12, ref # 4) and a tilt coil (See detailed description [0028]; Figs. 12, ref # 5,6), the "laminate" structure is disposed within the gap (See detailed description [0028]; Figs. 11,12), an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens (See [0031]-[0038]; Figs. 11-13, 16).

It would have been obvious to one of an ordinary skill in the art at the time of the invention to include " a tilt coil", so that the that movement of the laminate structure results in a corresponding movement in of the objective lens tilt direction for compensating for disturbance of tilt obtaining a stable servo operations in recording as well a reproduction, as taught by Ikegame.

Regarding claims 2, 23 and 28, the combination of Izuka and Ikegame show that (see Izuka) the magnetic circuit comprises pairs of magnets (47, 48) (See Figs. 9-10).

Regarding clams 3, 24 and 29, the combination of Izuka and Ikegame show that: (see Izuka) the coil unit comprises a plurality of printed circuit boards (28), and the focus coil, the tracking coil and the tilt coil are separately disposed on the printed circuit boards (See col. 21, lines 22-44; Figs. 28-30); or (see Ikegame) the coil unit comprises a printed circuit board, and the focus coil and the tracking coil are disposed on the printed circuit board (See Detailed description [0028]; Figs. 11, 12,ref# 23,24).

Regarding claim 4, the combination of Izuka and Ikegame show that (see Ikegame) the coil unit comprises a plurality of first and second printed boards, and the focus coil and the tracking coil are disposed on the first printed board and the tilt coil is disposed on the second printed board (See Detailed description [0028]; Figs. 11, 12,ref# 23,24); or (see Izuka) Figs. 28-30.

Regarding claim 5, the combination of Izuka and Ikegame show that (see Ikegame) the coil unit comprises a plurality of first and second printed boards, and the focus coil and the tilt coil are mounted on the first printed board and the tracking coil is mounted on the second printed board (See Detailed description [0028]; Figs. 11, 12,ref# 23,24); (see Izuka) board 31 and board 34.

Regarding claim 6 and 31, the combination of Izuka and Ikegame show that (see Izuka) the coil unit comprises only one focus coil (131), and even number of the tracking coils (134) and

(see Ikegame) two tilt coils (See detailed description [0028]; Figs. 11,12) and wherein the magnet is magnetized in two polarities in a focus direction (See Ikegame Detailed description [0033]; Figs. 11, 12, 13 ref# 8,9 and/or see Izuka Figs 22-27).

Regarding claim 7 and 26, in regard to the limitation as in claim 7 and 26 of the coil unit comprises an even number of focus coils, only one tracking coil, wherein the magnet is magnetized in two polarities in a tracking direction, as in claim 6 and 22 the combination of Izuka and Ikegame show that (see Izuka) the coil unit comprises only one focus coil (131), and even number of the tracking coils (134), wherein the magnets are magnetized in two polarities in a focus direction. Because these two limitations are believed to be art-recognized equivalents at the time of the invention in structures, one of ordinary skill in the art would have found this rearrangement of parts obvious. In support for such equivalence see the prior art made of record Japanese Publication No. 07-105552

to Kubo. Furthermore, it has been held that rearranging parts of an invention involves only routine skill in the art.

Assuming *arguendo* that the above is not art recognized equivalents at the time of the invention, claim 7 and 26 are rejected further in view of Kubo as recited below.

Kubo discloses such recognitions of arrangements between focus coils, tracking coils and magnet, see Figs. 1-8, which shows an arrangement as recited in claim 7 and see figures 9-11 which shows the equivalence arrangement as recited in claim 6.

2. Claims 7 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izuka U.S. Patent No. 5,555,228 in view of Ikegame Japanese Publication. No. 10-116431 and further in view of Kubo Japanese Publication. No. 07-105552.

As outlined in the above combination of Izuka and Ikegame, Ikegame shows two of the tilt coils (See detailed description [0028]; Figs. 11,12).

Kubo discloses an objective lens drive apparatus configured to be used in an optical pickup, comprising: a magnetic circuit comprising, a coil unit comprising a "laminate" structure including a focus coil, a tracking coil, the "laminate, and an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens is disposed outside of a gap in which the laminate structure is dispose and the coil unit comprises an even number of focus coils (19/23), only one tracking coil (20), and wherein the magnets are magnetized in two polarities in a tracking direction (Figs. 1-8).

It would have been obvious to one of an ordinary skill in the art at the time of the invention to include a coil unit comprises an even number of focus coils, only one tracking coil, and wherein the magnets are magnetized in two polarities in a tracking direction in order to obtain an optimum desired servo actuation that provides such configuration of coils and magnet, obtaining the desired recording and reproducing servo operation for focus and tracking errors, and making driving of the pickup efficient, as taught by Kubo.

Regarding claim 22, Izuka discloses an objective lens drive apparatus used in an optical pickup to detect the inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk (See Abstract), comprising:

a magnetic circuit comprising a first and second magnets (47, 48) separated from one another by a gap; (See Figs. 9,10); and

a coil unit (28) comprising a "laminate" structure including a focus coil (31), a tracking coil (34), the "laminate" structure is disposed within the gap, and

an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens is disposed outside of the gap in which the laminate structure is dispose (see col. 11, line 41 to col. 12, line 43),

wherein a focus servo is configured to be executed by supplying currents respectively to a plurality of the focus coils due to the sum of drive forces generated in the plurality of focus coils, and wherein an inclination adjustment of the objective lens is

configured to be executed by generating moment around the center of gravity of a movable part due to the difference between the drive forces (see col. 15, lines 45 to col. 16, line 22; Figs. 11-31).

Izuka fails to disclose a tilt coil.

However this feature is well known in the art as evidenced by Ikegame, which discloses an objective lens drive apparatus configured to be used in an optical pickup (See Abstract), comprising: a magnetic circuit comprising a first and second magnets separated from one another by a gap; (See Detailed description [0033]; Figs. 11, 12, ref# 8,9); and a coil unit comprising a "laminate" structure (See detailed description [0028]; Figs. 12 ref# 23,24) including a focus coil (See detailed description [0028]; ref # 3), a tracking coil (See detailed description [0028]; Figs. 12, ref # 4) and a tilt coil (See detailed description [0028]; Figs. 12, ref # 5,6), the "laminate" structure is disposed within the gap (See detailed description [0028]; Figs. 11,12), an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens (See [0031]-[0038]; Figs. 11-13, 16).

It would have been obvious to one of an ordinary skill in the art at the time of the invention to include " a tilt coil", so that the that movement of the laminate structure results in a corresponding movement in of the objective lens tilt direction for compensating for disturbance of tilt obtaining a stable servo operations in recording as well a reproduction, as taught by Ikegame.

Regarding claims 25 and 30, the combination of Izuka and Ikegame show that, (see Izuka col. 21, lines 22-44; Figs. 28-30); or (see Ikegame, Detailed description [0028]; Figs. 11, 12,ref# 23,24) the coil unit comprises a printed circuit board, and the focus coil and the tracking coil are disposed on the printed circuit board.

Regarding claim 27, Izuka discloses an objective lens drive apparatus used in an optical pickup to detect the inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk (See Abstract), comprising:

a magnetic circuit comprising a first and second magnets (47, 48) separated from one another by a gap; (See Figs. 9,10); and

a coil unit (28) comprising a "laminate" structure including a focus coil (31), a tracking coil (34), the "laminate" structure is disposed within the gap, and

an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens, the objective lens is disposed outside of the gap in which the laminate structure is dispose (see col. 11, line 41 to col. 12, line 43),

wherein a tracking servo is configured to be executed by supplying currents respectively to a plurality of the focus coils due to the sum of drive forces generated in the plurality of focus coils, and wherein an inclination adjustment of the objective lens is configured to be executed by generating a moment around a center of gravity of a movable part due to a difference between the drive forces (see col. 15, lines 45 to col. 16, line 22; Figs. 11-31).

Izuka fails to disclose a tilt coil.

However this feature is well known in the art as evidenced by Ikegame, which discloses an objective lens drive apparatus configured to be used in an optical pickup (See Abstract), comprising: a magnetic circuit comprising a first and second magnets separated from one another by a gap; (See Detailed description [0033]; Figs. 11, 12, ref# 8,9); and a coil unit comprising a "laminate" structure (See detailed description [0028]; Figs. 12 ref# 23,24) including a focus coil (See detailed description [0028]; ref # 3), a tracking coil (See detailed description [0028]; Figs. 12, ref # 4) and a tilt coil (See detailed description [0028]; Figs. 12, ref # 5,6), the "laminate" structure is disposed within the gap (See detailed description [0028]; Figs. 11,12), an objective lens connected to the laminate structure such that movement of the laminate structure results in a corresponding movement of the objective lens (See [0031]-[0038]; Figs. 11-13, 16).

It would have been obvious to one of an ordinary skill in the art at the time of the invention to include " a tilt coil", so that the that movement of the laminate structure results in a corresponding movement in of the objective lens tilt direction for compensating for disturbance of tilt obtaining a stable servo operations in recording as well a reproduction, as taught by Ikegame.

Regarding claim 42, claim 42 have limitations similar to those treated in the above rejection(s) with claims 7 and 26, and are met by the references as discussed above.

Regarding claims 49,51,53 and 55, the combination of Izuka and Ikegame show that the focus, tilt and tracking coils are disposed on a plurality of circuit boards, the plurality of circuits boards forming the "laminate" structure with one another.

Regarding claims 50,52,54 and 56, the combination of Izuka and Ikegame show that only one laminate structure including the focus, tracking and tilt coils is disposed in the gap.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L. Ortiz-Criado whose telephone number is (571) 272-7624. The examiner can normally be reached on Mon.-Thu.(12:30 pm- 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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